

Artificial intelligence in higher education: the state of the field

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Abstract

This systematic review provides unique findings with an up-to-date examination of artificial intelligence (AI) in higher education (HE) from 2016 to 2022. Using PRISMA principles and protocol, 138 articles were identified for a full examination. Using a priori, and grounded coding, the data from the 138 articles were extracted, analyzed, and coded. The findings of this study show that in 2021 and 2022, publications rose nearly two to three times the number of previous years. With this rapid rise in the number of AIEd HE publications, new trends have emerged. The findings show that research was conducted in six of the seven continents of the world. The trend has shifted from the US to China leading in the number of publications. Another new trend is in the researcher affiliation as prior studies showed a lack of researchers from departments of education. This has now changed to be the most dominant department. Undergraduate students were the most studied students at 72%. Similar to the findings of other studies, language learning was the most common subject domain. This included writing, reading, and vocabulary acquisition. In examination of who the AIEd was intended for 72% of the studies focused on students, 17% instructors, and 11% managers. In answering the overarching question of how AIEd was used in HE, grounded coding was used. Five usage codes emerged from the data: (1) Assessment/Evaluation, (2) Predicting, (3) AI Assistant, (4) Intelligent Tutoring System (ITS), and (5) Managing Student Learning. This systematic review revealed gaps in the literature to be used as a springboard for future researchers, including new tools, such as Chat GPT. A systematic review examining AIEd in higher education (HE) up to the end of 2022. Unique findings in the switch from US to China in the most studies published. A two to threefold increase in studies published in 2021 and 2022 to prior years. AIEd was used for: Assessment/Evaluation, Predicting, AI Assistant, Intelligent Tutoring System, and Managing Student Learning.